United States Environmental Protection Agency
New England Office
www.epa.gov/ne
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Facilities

Grounds Maintenance: Integrated Pest Management

Summary: Integrated Pest Management (IPM) is an effective and environmentally sensitive approach to pest management that relies on a combination of common-sense practices. IPM programs use current, comprehensive information on the life cycles of pests and their interaction with the environment. This information, in combination with available pest control methods, is used to manage pest damage by the most economical means, and with the least possible hazard to people, property, and the environment. The IPM approach can be applied to both agricultural and non-agricultural settings, such as the home, garden, and workplace. IPM takes advantage of all appropriate pest management options including, but not limited to, the judicious use of pesticides. (*from the EPA webpage*).

Project Goals

- Decrease the amount of chemicals on campus.
- Decrease potential exposure from pesticide usage on campus.
- Institute programs better for the environment and more protective of the health of the campus community for now and in the future.

Description

In 1962, Rachel Carson's *Silent Spring* exposed the hazards of the pesticide DDT, and helped set the stage for looking at the effects of pesticide usage. It has been shown that pesticides can cause health problems such as birth defects, nerve damage, cancer, acute or chronic injury to the lungs, endocrine and immune system damage as well as malnutrition by blocking the absorption of certain nutrients important to healthy growth and development. Children are at greater risk of pesticide exposure than adults because pound for pound of body weight, children not only eat more and breathe more, but they also have a more rapid metabolism than adults. They play on the floor and lawn where pesticides are commonly applied and their bodies may not be able to rid of pesticides as readily as needed because of their immature excretory system. Pesticides can also degrade soils, pollute waters, and cause the loss of animal and plant species. CUA recognized these factors and how the campus maintains their grounds affects the health and well being of the environment.

THE CATHOLIC UNIVERSITY of AMERICA

Campus Profile

The Catholic University of America
Washington, DC
UG Students: 2,587
Grad Students: 2,923
Resident Students: 2,028
Faculty/Staff: 641/ 1,163
Campus Area: 144 acres
Buildings: 54
Operating Budget: $137 Million

Green Report

The campus has an *Environmental Awareness Committee* comprised of faculty, staff, and students. Students can, and have been, a huge driver of environmental programs on campus.
CUA has received various awards related to renewable energy, mainly from wind-generated electricity. For example, a Certificate of Partnership from the EPA's Green Power Partnership for reduction in emissions associated with power generation and procurement of green power. Recognized by the National Wildlife Federation as an environmentally green campus through energy efficiency and conservation, and for recycling, solid waste, and materials flow.

Pre-Project Considerations

1. Know local and state requirements for pesticide usage.
2. Determine if your institution is going to practice good industry standards and or will support the philosophy of the IPM program.
3. Review the grounds of your campus in detail.

Steps Taken

Commencement

Special attention is paid to the grounds during this special time of year. The previous two years, some chemicals were sparingly applied. This year (2003) CUA does not expect to apply any chemicals due to the planning put in a few years ago. This included use of native plants.

1. Educated the leaders and top administrators of the university to gain buy-in for implementing and maintaining an IPM program on campus.
2. Developed an RFP for interior pest control and chose contractors who truly practiced Integrated Pest Management.
3. Worked with planning and construction groups when building new (or renovating) buildings to offset any current and possible future pest problems.
4. Reviewed planting schedules and ensured plants are able to thrive in an urban setting.
5. Monitored contractors and nurseries where plants are raised.
6. If chemicals needed to be used, their application is done when students are away from campus.
7. Trained and certified all technicians; ensured their licensees are maintained.
8. Developed programs to ensure proper fertilization, maintenance, and protection as well as setting up a soil management program.
9. Set up proper recordkeeping and document control.
10. If someone on campus is found applying pesticides (i.e. spraying plants for bugs in their office), a notice is sent out by the building manager, in conjunction with EH&S, in regards to the correct management of pests in accordance with the IPM program.

Tools Used

- Environmentally safe chemicals such as:
  - Horticultural oils
  - Insecticidal soaps
- Chemicals bought will only have “caution” labels rather than “danger” as is seen on most pesticides
- Aerators
- Irrigation Systems
- Hand weeders

Participants

Grounds/Fleet/Recycling in Facilities Maintenance & Operations
Manager and twelve technicians
Perform work outside

Office of Environmental Health and Safety
Industrial Hygienist
Serve as a resource for Grounds and the CUA community

IPM Contractor
Performs work inside buildings on campus

Financial Info

Prior to implementing the program in 2001, a line item was not dedicated to IPM. This has now been established in the Grounds Dept.

Costs

- $300 a year per technician to maintain certification, a license, and to receive continuing education credits.
- The labor to take care of plants can increase.
- Contractors who truly practice IPM tend to cost more.

Savings

Decrease in purchase of chemicals as well as hazardous waste disposal costs.

Performance and Benefits

- The projects goals and objectives were met!
- Resulted in some cost savings in the purchase of chemicals.
- Decreased potential liabilities.
- Ensured compliance with local, state, and federal regulations that govern the storage, use and application of pesticides.

Lessons Learned

- Become involved with construction or renovation projects in the beginning and work with Architects to ensure they understand the nature of your IPM program.
- Populate your campus with native plants that are tolerant of the existing environmental conditions.
- Be patient and let nature take its course (within reason).
- Don't use a "blanket" approach for *all* the grounds on your campus, rather work with the nuances of each area that you will be maintaining.
- Develop an awareness campaign to communicate the goals of IPM to faculty, staff, and students.
- Include technician expectations and requirements in the job description.
- Assign well-trained and devoted employees who have a vested interest in IPM and who will devote the time needed to the program.
- The best approach would be to have a full-time person dedicated to IPM.
- Keep up to date with new and better IPM practices (i.e. use of natural predators).

For Further Information

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EPA Pesticide Program
http://www.epa.gov/pesticides/index.htm

National Integrated Pest Management Network
http://www.reeusda.gov/nipmn/

National Science Foundation – Center for Integrated Pest Management
http://cipm.ncsu.edu/index.html

Database of IPM Resources
http://www.ippc.orst.edu/cicp/

Farming the Net – Integrated Pest Management Links at Ohio State University – Extension
http://farmnet.osu.edu/links/ipm.html

IPM Links at the University of Delaware
http://www.udel.edu/IPM/links.html

Other Successful IPM Programs

University of Maryland – Integrated Pest Management
http://www.agnr.umd.edu/users/nrsl/entm/
http://pest.umd.edu/inetmce.html

North Carolina State University

University of North Carolina

State University of New York at Buffalo

University of Massachusetts at Amherst